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SERIES I. EVALUATION OF FOREIGN FRUITS AND NUTS.

NO. 4. PISTACHIO NUT

PRELIMINARY NOTES ON THE PROPAGATION, PLANTING
AND CULTURE OF THE PISTACHIO NUT

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A report prepared as a cooperative service to
States of the Western Region

March 1956

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PROPAGATION

The pistachio nut (Pistacia vera L.) is usually propagated by T-budding, placing two buds in each stock to insure a set of at least one. Budding may be carried out over a considerable period of time, but if started before mid-April, when sap flow is more apt to be excessive, a light set of buds may be expected. A marked improvement in bud take occurs as the time of budding is extended through the summer and fall.

Seedlings of several Pistacia species are used as rootstocks. Pistacia seeds are collected in the fall and stored dry at about 70° F. until time to plant. Planting in the nursery row can be done from late fall to early spring. Of the Pistacia species tested, two are now recommended as rootstocks by the Plant Introduction Section of the Agricultural Research Service, U.S.D.A. Seed of one, P. atlantica Desf. can be planted without pregermination treatment other than soaking in water for 12 to 24 hours, then rubbing and washing on a coarse screen to remove the pulp. If held dry in storage until spring, seed of the other, P.I. 8521, P. terebinthus L., * should, in addition to the soaking and scrubbing, be kept damp for approximately two to three weeks at room temperature (about 70° F.). This is done by spreading the drained seed in a layer on a surface or in a container and protecting it from drying out. Appearance of excessive mold during this treatment period can be taken care of by washing the seed well in running water. The seed is planted as soon as it begins to show signs of germination. P. terebinthus seed can also be planted without pregermination treatment if sown in late fall or early winter. In all cases the outer pulp must be scrubbed off since it acts as a germination inhibitor.

While seedlings of these two species make a slower growth in the nursery than those of P. vera or its hybrids with other species, they tend to be more nematode resistant than P. vera. Whatever species are used for rootstocks, only the most vigorous growing seedlings (usually about 50 to 60 percent) should be transplanted to the field. Those remaining should be discarded.

*Possible hybrid.

With early planting of seed and good care in watering and supplying ample nutrients throughout the summer, part or all of the more vigorous seedlings may reach budding size by fall. Buds of both female and male P. vera varieties are quite large, requiring a fairly large seedling to accommodate them. However, Pistacia seedlings tend to be taprooted in the nursery and suffer considerable transplanting shock their first season in the field. Consequently, they should be transplanted to their permanent planting site as early as possible, for they grow well once they have become established.

TRANSPLANTING TO THE ORCHARD

Transplanting can be done any time during the dormant season, but the sooner after leaf-fall the better. Likewise, planting as quickly as possible after lifting is essential. Pistacia roots are injured if exposed to the air for more than a few hours even if kept well dampened. All bare-rooted trees that cannot be planted at once should be heeled-in and the roots well covered with soil until planting time. Thorough watering of each tree following transplanting will help reduce losses by compacting the soil around the roots. Seedlings that have reached sufficient size to be budded their first year in the nursery can be transplanted with their dormant variety buds. If these variety buds fail to grow following transplanting, the seedling can be top-budded higher up on its trunk as soon as it has made sufficient new growth to take additional buds. Unbudded seedlings can be planted if preferred. Varieties propagated on well established seedlings in the orchard soon catch up in growth with those propagated in the nursery prior to transplanting.

Any of the several planting systems used for other tree crops can likewise be used in setting out the pistachio orchard. The square system has equal distance between rows and trees within the row. The quincunx system has a fifth tree planted in the center of each square. The hexagonal or equilateral triangle system places the rows closer together but preserves the same distance between the trees. In any case, the minimum distance for pistachio trees in a permanent planting should be not less than 30 feet between trees. A distance of 32 to 35 feet would be even better. Closer spacing, using fillers, can be used until crowding requires their removal.

IRRIGATION

In an area with 18 or more inches of winter rainfall, two summer irrigations are needed to maintain good growth of trees. Additional irrigations in drier areas will also be beneficial since the pistachio tree responds as well to good management practices as do other tree crops. Since pistachio trees, like almonds, are sensitive to wet feet, any system of intercropping should avoid excessive use of water around the trees. Mounding or ridging about each tree will aid in keeping standing water away from the crowns during irrigation.

VARIETIES

Although Red Aleppo and Trabonella are the most promising of the older female varieties, it is probable that one or more of the recently named seedling selections under test at the U. S. Plant Introduction Garden, Chico, California, will replace them. The nuts of the selected Kerman, Damghan and Lassen varieties are larger and generally split better than either Red Aleppo or Trabonella. Kerman may roast somewhat better than Damghan but in some years it has a shell flap or appendage that roughens its appearance. Lassen, like Damghan, is smooth.

POLLINATION

The pistachio nut is dioecious; that is, male and female flowers are borne on separate trees. It is wind pollinated. Thus, pollinator trees must be so spaced throughout the orchard that they take advantage of the prevailing winds at flowering time in early April. Consequently, male pollinators must be selected that will shed their pollen at the time the female blossoms are receptive. In the past, one male to each eight to ten females has been the recommended ratio, but currently it is believed this can be increased to ten or twelve and possibly fourteen females for each pollinator.

Of the pollinators studied, Chico No. 23 and Peters have proven satisfactory for the range of Red Aleppo and Trabonella bloom. Peters only is suitable for Kerman, Damghan and Lassen, varieties which tend to reach full bloom stage several days later than Red Aleppo and Trabonella. Peters serves as an excellent pollinator for the early part of their blossoming period, but to insure good pollination at all times, a male with a blooming period slightly later than Peters is needed. Of the several under study, one or two appear promising as supplemental pollinators to fill this gap.

